

Application No. 09/848,140

AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1. (Currently Amended) A metal-ceramic circuit board comprising:  
a base plate of aluminum or aluminum alloy, the base plate having a proof stress not higher than 320 (MPa) and a thickness not smaller than 1 mm; and  
a ceramic substrate board,  
wherein one surface of the ceramic substrate board is bonded directly to the base plate without any intervening material, ~~and the base plate has a proof stress not higher than 320 (MPa) and a thickness not smaller than 1 mm.~~
2. (Original) The metal-ceramic circuit board according to claim 1, wherein the other surface of the ceramic substrate board has a metal conductive member for an electronic circuit.
3. (Original) The metal-ceramic circuit board according to claim 2, wherein said conductive member is made of a material selected from copper, copper alloy, aluminum and aluminum alloy.

Application No. 09/848,140

4. (Original) The metal-ceramic circuit board according to claim 1, wherein said ceramic substrate board is made of a material selected from alumina, aluminum nitride and silicon nitride.

5. (Original) The metal-ceramic circuit board according to claim 2, wherein said ceramic substrate board is made of a material selected from alumina, aluminum nitride and silicon nitride.

6. (Original) The metal-ceramic circuit board according to claim 3, wherein said ceramic substrate board is made of a material selected from alumina, aluminum nitride and silicon nitride.

7. (Currently Amended) A power module comprising:  
a base plate of aluminum or aluminum alloy, the base plate having a proof stress not higher than 320 (MPa) and a thickness not smaller than 1 mm;  
a ceramic substrate board;[[,]] and  
a semiconductor tip;[[,]]

wherein one surface of the ceramic substrate board is bonded directly to the base plate without any intervening material[[,]] and said semiconductor tip is provided on the other surface of said ceramic substrate board ~~and the base plate has a proof stress not higher than 320 (MPa) and a thickness not smaller than 1 mm.~~

8-22. (Canceled).

Application No. 09/848,140

Please add new claims 23-34 as follows:

23. (New) A metal-ceramic circuit board comprising:
- a substantially planar base plate of aluminum or aluminum alloy, the base plate having a proof stress of not higher than 320 MPa and a thickness of not smaller than 1mm; and
  - a ceramic substrate board of planar plate,
- wherein one surface of the ceramic substrate board is bonded directly to the base plate, the other surface of the ceramic substrate board has a metal conductive member, said metal conductive member forming part of an electronic circuit member, and the area of the base plate is larger than that of the ceramic substrate board.
24. (New) The metal-ceramic circuit board according to claim 23, wherein a plurality of ceramic substrate boards are bonded directly on one surface of the base plate.
25. (New) The metal-ceramic circuit board according to claim 23, wherein said conductive member is made of a material selected from the group consisting of copper, a copper alloy, aluminum, and an aluminum alloy.
26. (New) The metal-ceramic circuit board according to claim 23, wherein said ceramic substrate board is made of a material selected from the group consisting of alumina, aluminum nitride, and silicon nitride.
27. (New) The metal ceramic circuit board according to claim 23, wherein said base plate has a heat sink.

Application No. 09/848,140

28. (New) The metal-ceramic circuit board according to claim 23, wherein said metal conductive member is bonded on the other surface of the ceramic substrate board using a brazing material.
29. (New) The metal-ceramic circuit board according to claim 1, wherein the circuit board is adapted to withstand a thermal cycle test of at least 1000 times.
30. (New) The metal-ceramic circuit board according to claim 29, wherein the thermal cycle test comprises at least 3000 times.
31. (New) A power module according to claim 7, wherein the power module is adapted to withstand a thermal cycle test of at least 1000 times.
32. (New) A power module according to claim 31, wherein the thermal cycle test comprises at least 3000 times.
33. (New) The metal-ceramic circuit board according to claim 23, wherein the circuit board is adapted to withstand a thermal cycle test of at least 1000 times.
34. (New) The metal-ceramic circuit board according to claim 33, wherein the thermal cycle test comprises at least 3000 times.